

TIMOTHY J. KNEAFSEY P.E., Ph.D.
Earth Sciences Division
Department of Hydrogeology and Reservoir Dynamics
E. O. Lawrence Berkeley National Laboratory

EDUCATION

Ph.D., Civil/Environmental Engineering, University of California at Berkeley, 1996, Minors:
Chemical Engineering, Transport in Porous Media
M.S., Civil/Environmental Engineering, University of California at Berkeley, 1989, with honors
B.S., Civil Engineering, University of New Mexico, 1987, with distinction
B.S., Mechanical Engineering, University of New Mexico, 1983, with distinction

REGISTRATION

Professional Civil Engineer in California

HONORS

Regents Fellowship, University of California at Berkeley 1988 - 1989

RESEARCH INTERESTS

Experimental studies in reservoir processes and subsurface hydrology, including multiphase flow, phase change, thermal processes, thermal-chemical processes, gas hydrates, coal bed methane, and carbon dioxide sequestration. Other interests include imaging as a tool to investigate flow processes.

RESEARCH EXPERIENCE

Mechanical Engineer, E.O. Lawrence Berkeley National Laboratory, 2007 - Present
Geological Scientist, E.O. Lawrence Berkeley National Laboratory, 1999 - 2007
Post-Doctoral Research Fellow, E.O. Lawrence Berkeley National Laboratory, 1996 - 1999
Graduate Research Assistant, University of California at Berkeley, 1991-1996

TEACHING EXPERIENCE

Teaching Assistant, University of California at Berkeley 1992 - 1993
Secondary School Mathematics Teacher, U.S. Peace Corps, Holy Rosary Secondary School, Pujehun, Sierra Leone, 1983 - 1985

PROFESSIONAL EXPERIENCE

Environmental Engineer, Kennedy/Jenks Consultants, San Francisco, California, 1989 - 1991
Environmental Engineer, U.S. Environmental Protection Agency, San Francisco, California, 1987 - 1989

PATENT

Freifeld, B.M., **T.J. Kneafsey**, J. Pruess, L. Tomutsa, P.A. Reiter, and T.M. deCastro, Portable imaging system method and apparatus, United States Patent 7,082,185, July 25, 2006

RESEARCH SUPERVISION

Matthew Walsh, Ph.D. Student, Colorado School of Mines, Capillary Pressure of hydrate-bearing sediments
Arvind Gupta, Ph.D. Candidate, Colorado School of Mines, Gas hydrate imaging, heat and mass transfer in gas hydrate-bearing porous media
Heather Elsen, Ph.D. Student, University of California at Berkeley, Gas hydrate formation and dissociation in porous media
Nefeli Moridis, Undergraduate Student, University of Texas, Gas Hydrate image analysis
Gordon Wu, Undergraduate Student, University of California at Berkeley, Validation of thermal property estimation technique
Jacob Pruess, Undergraduate Student, University of California at Berkeley, Portable x-ray CT Scanner, various investigations
Paul Reiter, Undergraduate Student, Princeton University, Portable x-ray CT Scanner

LBNL SERVICE

Earth Sciences Division Safety Committee Chairperson/Member, 2005 - Present

LBNL Building Emergency Team Member, 2001 – 2009

JOURNAL SERVICE

Guest Editor, Energy Conversion and Management, 2006

PUBLICATIONS

Journal Papers/Book Chapter

Kneafsey, T.J., Y. Seol, A. Gupta, L. Tomutsa, "Permeability of Laboratory-Formed Methane-Hydrate-Bearing Sand", submitted to SPE Journal (June 2008, revision requested June 2009)

Kneafsey, T.J. and K. Pruess, Laboratory Flow Experiments for Visualizing Carbon Dioxide-Induced, Density-Driven Brine Convection, Transport in Porous Media DOI 10.1007/s11242-009-9482-2, October, 2009, LBNL-2731E

Kneafsey, T.J., H. Liu, W. Winters, R. Boswell, R. Hunter, and T.S. Collett, "Analysis of core samples from the BPXA-DOE-USGS Mount Elbert gas hydrate stratigraphic test well: Insights into core disturbance and handling", Marine and Petroleum Geology, doi:10.1016/j.marpetgeo.2009.10.009 October, 2009, LBNL-2730E

Gupta, A., G.J. Moridis, **T.J. Kneafsey**, and E.D. Sloan, "Modeling Pure Methane Hydrate Dissociation Using a Numerical Simulator from a Novel Combination of X-ray Computed Tomography and Macroscopic Data", submitted to Energy and Fuels (June 2009)

W. Waite, C. Santamarina, D. Cortes, B. Dugan, N. Espinoza, J. Germaine, J. Jang, J. Jung, **T.J. Kneafsey**, H. Shin, K. Soga, W. Winters, T-S. Yun "Physical Properties of Hydrate-Bearing Sediments" Rev. Geophys., 47, RG4003, doi:10.1029/2008RG000279, December 2009

Seol, Y. and **T.J. Kneafsey**, "X-ray computed-tomography observations of water flow through anisotropic methane hydrate-bearing sand, Journal of Petroleum Science and Engineering 66 (2009) 121–132, doi:10.1016/j.petrol.2009.01.008

Waite, W. F., **T. J. Kneafsey**, W. J. Winters, and D. H. Mason (2008), Physical property changes in hydrate-bearing sediment due to depressurization and subsequent repressurization, J. Geophys. Res., 113, B07102, doi:10.1029/2007JB005351, LBNL-664E

Gupta, A., G.J. Moridis, **T.J. Kneafsey**, and E. D. Sloan, Jr., "Modeling Pure Methane Hydrate Dissociation Using a Numerical Simulator from a Novel Combination of X-ray Computed Tomography and Macroscopic Data", in preparation for submittal to Chemical Engineering Science Ghezzehei, T.A., **T.J. Kneafsey**, and G.W. Su, "Correspondence of the Gardner and van Genuchten relative permeability function parameters," Water Resources Research, v. 43, W10417, doi:10.1029/2006WR005339, 2007

Kneafsey, T.J., Y. Seol, G.J. Moridis, L. Tomutsa, B.M. Freifeld, "Laboratory measurements on core-scale sediment/hydrate samples to predict reservoir behavior", Submitted to AAPG Bulletin, November, 2005, LBNL-59085

Gupta, A., **T.J. Kneafsey**, G.J. Moridis, Y. Seol, M.B. Kowalsky, E.D. Sloan Jr., "Methane hydrate thermal conductivity in a large heterogeneous porous sample", J. Phys. Chem. B; 2006; ASAP Web Release Date: 02-Aug-2006; DOI: 10.1021/jp0619639LBNL-59088

Kneafsey, T.J., L. Tomutsa, G.J. Moridis, Y. Seol, B.M. Freifeld, C.E. Taylor, and A. Gupta, "Methane Hydrate Formation and Dissociation in a Core-Scale Partially Saturated Sand Sample", Journal of Petroleum Science and Engineering, 56 (2007) 108–126. LBNL-59087

Seol, Y., **T.J. Kneafsey**, and K. Ito, An Evaluation of the Active Fracture Concept with Modeling Unsaturated Flow and Transport in a Fractured Meter-Sized Block of Rock, Vadose Zone Journal, December 2005, doi:10.2136/vzj2004.0175, LBNL-52818

Freifeld, B.M. and **T.J. Kneafsey**. "Investigating methane hydrate in sediments using X-ray computed tomography". In Advances in the Study of Gas Hydrates. Kluwer Academic/Plenum Press, 2004. p. 227-238, LBNL-55030

Kneafsey, T.J., Moridis, G., Freifeld, B., Tomutsa, L., Seol, Y. and Taylor, C.E., 2005. Understanding Methane Hydrate Behavior Using X-ray Computed Tomography, Fire in the Ice, The National Energy Technology Laboratory Methane Hydrate Newsletter, pp. 1-4 LBNL/PUB-926

- Salve, R., and **T. J. Kneafsey** (2005), Vapor-phase transport in the near-drift environment at Yucca Mountain, *Water Resour. Res.*, 41, W01012, doi:10.1029/2004WR003373, LBNL-55212
- Freifeld, B.M.; **Kneafsey, T.J.**, and Rack, F. "On-Site Geologic Core Analysis Using a Portable X-ray Computed Tomographic System," From: Rothwell, R.G. 2006. *New Techniques in Sediment Core Analysis*. Geological Society, London, Special Publications, 267, 165–178. 0305-8719/06/\$15.00, The Geological Society of London, 2006, LBNL-55698
- Kneafsey, T.J.**, and Hunt, J.R. "Non-aqueous phase liquid spreading during soil vapor extraction," *Journal of Contaminant Hydrology*, 68(3-4), pp. 143-164, 2004, LBNL-46519
- Hu, Q., **T.J. Kneafsey**, J.J. Roberts, L. Tomutsa, and J.S.Y. Wang, "Characterizing Unsaturated Diffusion in Porous Tuff Gravel, *Vadose Zone Journal* 3:1425–1438 (2004), LBNL-51504
- Dobson, P.F., **T.J. Kneafsey**, J. Hulen, and A. Simmons, "Porosity, permeability, and fluid flow in the Yellowstone Geothermal System, Wyoming," *Journal of Volcanology and Geothermal Research*, v 123, 313-324, 1 May 2003, LBNL-50044
- Dobson, P.F., **T.J. Kneafsey**, E.L. Sonnenthal, N. Spycher, and J.A. Apps, "Experimental and numerical simulation of dissolution and precipitation: Implications for fracture sealing at Yucca Mountain, Nevada, *Journal of Contaminant Hydrology*, v 62-63, 459-476, 2003, LBNL-48872
- Hu, M.Q., **T.J. Kneafsey**, R.C. Trautz, and J.S.Y. Wang, "Tracer Penetration into Welded Tuff Matrix from Flowing Fractures, *Vadose Zone Journal*, Vol. 1, No. 1, August 2002, LBNL 46400
- Kneafsey, T.J.** and K. Pruess "Laboratory Experiments on Heat-Driven Two-Phase Flows in Natural and Artificial Rock Fractures," *Water Resources Research*, Vol. 34, No. 12, p. 3349, December, 1998

PRESENTATIONS

Invited

- W.F. Waite, **T.J. Kneafsey**, J.C. Santamarina, W.J. Winters, T-S Yun, D.H. Mason, C. Ruppel, "Physical Property Changes in Hydrate-Bearing Sediment Samples due to Depressurization/Repressurization," American Geophysical Union, San Francisco CA, Dec. 11-15, 2006
- T.J. Kneafsey**, G.J. Moridis, and M.B. Kowalsky, "Engineering Models: The TOUGH-Fx/Hydrate Simulator," Integration of Modeling and USGS Hydrate Laboratory Research, Denver CO, August 2-3 2005
- Kneafsey, T.J.**, L. Tomutsa, C.E. Taylor, A. Gupta, G.J. Moridis, B.M. Freifeld, Y. Seol, "Methane Hydrate Formation and Dissociation in a Partially Saturated Sand," CSM Hydrate Consortium Meeting, Golden CO, March 24-25, 2005

Submitted

- Seol, Y., and **T.J. Kneafsey**, Fluid flow through heterogeneous methane hydrate bearing sand: observations using x-ray CT scanning, Proceedings of the 6th International Conference on Gas Hydrates (ICGH 2008), Vancouver, British Columbia, CANADA, July 6-10, 2008.
- Seol, Y., **T.J. Kneafsey**, and G.J. Moridis (2007), Numerical simulation of hydrate formation morphology in cylindrical experimental sand columns, *Eos Trans. AGU*, 88(52), Fall Meet. Suppl., Abstract OS23A-1037
- Kneafsey, T.J.**, K. Pruess, and N. Spycher, Preliminary experimental investigation of water injection to reduce non-condensable and corrosive gases in steam produced from vapor-dominated reservoirs, PROCEEDINGS, Thirty-Third Workshop on Geothermal Reservoir Engineering, Stanford University, Stanford, California, January 28-30, 2008. SGP-TR-185
- Nakagawa, S., **T.J. Kneafsey**, and G.J. Moridis, Mechanical strength and seismic property measurements of hydrate-bearing sediments (HBS) during hydrate formation and loading tests, 2008 Offshore Technology Conference held in Houston, Texas, U.S.A., 5–8 May 2008, OTC 19559
- Kneafsey, T.J.**, Y. Seol, A. Gupta, and L. Tomutsa, Permeability of Laboratory-Formed Methane-Hydrate-Bearing Sand, 2008 Offshore Technology Conference held in Houston, Texas, U.S.A., 5–8 May 2008, OTC 19536-PP
- Kneafsey, T.J.**, and L. Tomutsa, X-Ray CT Scan of cores from NGHP Expedition 01, 2006, Presented at NGHP GAS HYDRATE CONFERENCE 2008 (Under the Aegis of Indian National Gas Hydrate Program) NEW DELHI, INDIA JANUARY 29TH TO 31ST 2008 Organized by Directorate General of Hydrocarbons, Ministry of Petroleum & Natural Gas, Government of India

- Kneafsey, T.J.**, and L. Tomutsa, CT Scanning, Analysis, and Production Test - Mt Elbert Core Samples, presented at BP-DOE Mount Elbert-01 Gas Hydrate Stratigraphic Test Data Analyses/Interpretation & Production Test Design Workshop, March 2008
- Kneafsey, T.J.**, Y. Seol, A. Gupta, L. Tomutsa, G.J. Moridis; (2007), Relative Permeability of Gas Hydrate Bearing Sediments, Eos Trans. AGU, 88(23), Jt. Assem. Suppl., Abstract NS51B-02
- Seol, Y., **T.J. Kneafsey**, L. Tomutsa, and G.J. Moridis. "Preliminary relative permeability estimates of methane hydrate-bearing sand". In TOUGH Symposium 2006; Berkeley, CA; 15-17 May 2006. 2006. LBNL-60368
- Benson, S.M., L. Tomutsa, D. Silin, **T. Kneafsey**, L. Miljkovic, "Core scale and pore scale studies of carbon dioxide migration in saline formations", 8th International Conference on Greenhouse Gas Control Technologies, Trondheim, Norway, 19-22 June 2006, LBNL-59082
- Kneafsey, T.J.**, L. Tomutsa, Y. Seol, G.J. Moridis. "Relative Permeability Measurements of Hydrate-Bearing Sediments", Science and Technology Issues in Methane Hydrate R&D, Engineering Conferences International, Kauai, March 5-9, 2006
- Su, G.W., **T.J. Kneafsey**, T.A. Ghezzehei, P.J. Cook, and B.D. Marshall, Field investigation of the drift shadow, AGU 2005 Fall Meeting, December 5-9, 2005, San Francisco, CA, LBNL-60950.
- Kneafsey, T.J.**, L. Tomutsa, Y. Seol, G.J. Moridis, "On relative permeability of hydrate-bearing sediments", American Geophysical Union Fall Meeting, San Francisco, CA, December 2005
- Su, G.W., **T.J. Kneafsey**, T.A. Ghezzehei, B.D. Marshall, and P.J. Cook, "Field Investigation of the Drift Shadow", International High-Level Radioactive Waste Management Conference 2006, Las Vegas, Nevada, April 30 - May 4, 2006 LBNL-59455
- Salve, R. and **T.J. Kneafsey**, "Microclimate Dynamics in a Non-Ventilated Drift at Yucca Mountain", International High-Level Radioactive Waste Management Conference 2006, Las Vegas, Nevada, April 30 - May 4, 2006
- Kneafsey, T.J.**, L. Tomutsa, G.J. Moridis, C.E. Taylor, and A. Gupta, "Methane Hydrate Formation and Dissociation in a Partially Saturated Sand – Measurements and Observations", Fifth International Conference on Gas Hydrates, Trondheim, Norway, June 2005, LBNL 56379 Abs
- Moridis, G.J., Seol, Y. and **Kneafsey, T.J.**, 2005. Studies of reaction kinetics of methane hydrate dissociation in porous media, Fifth International Conference on Gas Hydrates (ICGH 5), Trondheim, Norway, LBNL-57298.
- Gupta, A., E.D. Sloan, **T.J. Kneafsey**, L. Tomutsa, G. Moridis, "Modeling methane hydrate dissociation x-ray CT data using a heat transfer model", Fifth International Conference on Gas Hydrates, Trondheim, Norway, June 2005
- Kneafsey, T.J.**, Tomutsa, L., Taylor, C.E., Gupta, A., Moridis, G., Freifeld, B. and Seol, Y., 2005. Methane hydrate formation and dissociation in a partially saturated sand, The 229th ACS National Meeting, San Diego, CA, LBNL-56933 Ext. Abs.
- Kneafsey, T.J.** B.M. Freifeld, L. Tomutsa, Y. Seol, H. Elsen, "Measurements on laboratory core-scale sediment/hydrate samples to predict reservoir behavior", AAPG Hedberg Conference Gas Hydrates: Energy Resource Potential and Associated Geological Hazards, September 12-16, 2004, Vancouver, BC, Canada, LBNL-54863
- Spycher, N., Sonnenthal, E., **Kneafsey, T.** and P. Dobson, "An integrated approach to predict coupled processes at a nuclear waste repository," 11th Annual Symposium on Water-Rock Interaction, Sarasota Springs, NY, June 25 – July 2, 2004, LBNL-55099 Ext. Abs.
- Spycher N., Sonnenthal E., Dobson P., and **T. Kneafsey**, "Modeling of coupled THC processes and rock-fluid interactions at the proposed nuclear waste repository at Yucca Mountain, Nevada," ENTRY Workshop 2003, Japan Nuclear Cycle Development Institute, Tokai, Japan, October 22-24, 2003, LBNL-55098 Abs.
- Dobson, P. and **T. Kneafsey**. "Natural analogues for Yucca Mountain coupled processes: Geothermal systems", IAEA Waste Management Research, Vienna, Austria, 2003. LBNL-53872 Abs.
- Levy, S.S., **T.J. Kneafsey**, Y. Seol, L.D. Deloach, and R.L. Jones. "Pore fluids and introduced materials in the heated-rock environment at Yucca Mountain, Nevada" Geological Society of America, 2003. LBNL-55649 Abs. (LA-UR-03-4261)

- Freifeld, B.M., **T.J. Kneafsey**, J. Pruess, and L. Tomutsa. "Field characterization of hydrate-bearing core using X-ray computed tomography" 2003 Geological Society of America Annual Conference and Exhibition, Seattle Washington, 2003. LBNL-53096 Abs.
- Freifeld, B.M., **T.J. Kneafsey**, L. Tomutsa, and J. Pruess. "Development of a portable x-ray computed tomographic imaging system for drill-site investigation of recovered core". In 2003 International Symposium of the Society of Core Analysts; Pau, France; Sept 21-24, 2003. 2003. LBNL-52088 Ext. Abs.
- Gritto, R., **T. Kneafsey** and L. Tomutsa. Core evaluation of hydrologic and seismic properties of methane-bearing coals. ". In 2003 International Symposium of the Society of Core Analysts; Pau, France; Sept 21-24, 2003. 2003. LBNL-52078 Abs.
- Salve, R. and **T.J. Kneafsey**, "Vapor-Phase Transport in the Near-Drift Environment at Yucca Mountain," AGU 2003 Fall Meeting, San Francisco, California, December 2003, LBNL-55212 Abs.
- Kneafsey, T.J.**, P.F. Dobson, E.L. Sonnenthal, N. Spycher, and J.A. Apps. "Numerical and experimental simulation of dissolution and precipitation: Implications for fracture sealing at Yucca Mountain, Nevada" The Geological Society of America 2002 Denver Annual Meeting, 2002. LBNL-51085 Abs.
- Seol, Y., **T.J. Kneafsey**, S.A. Finsterle, and K. Ito, "Two-D Simulations of Flow and Transport on a Meter-Sized Unsaturated Fractured Tuff Block", AGU 2002 Fall Meeting, San Francisco, California, 6-10 December 2002, LBNL-51532 Abs.
- Kneafsey, T.J.**, R. Gritto, and L. Tomutsa, "Hydraulic and Seismic Properties of Methane-Bearing Coal", AGU 2002 Fall Meeting, San Francisco, California, 6-10 December 2002, EOS, Vol. 83, LBNL-51673 Abs.
- Hu, Q., **T. Kneafsey**, J. Wang, J. Roberts, and S. Carlson, "Characterizing Unsaturated Diffusion in Porous Granular Tuff", AGU 2002 Fall Meeting, San Francisco, California, 6-10 December 2002, LBNL-51504 Abs.
- Freifeld, B.M., **T.J. Kneafsey**, L. Tomutsa, L.A. Stern, and S.H. Kirby, "Use of X-Ray Computed Tomographic Data for Analyzing the Thermodynamics of a Dissociating Porous Sand/Hydrate Mixture," Proceedings of the Fourth International Conference on Gas Hydrates, Yokohama, May 19-23, 2002, pp. 750-755, LBNL-49859
- Tomutsa, L., B. Freifeld, **T.J. Kneafsey**, and L.A. Stern, "X-ray Computed Tomography Observation of Methane Hydrate Dissociation," SPE Gas Technology Symposium held in Calgary, Alberta, Canada, 30 April-2 May 2002, SPE 75533, LBNL 49580
- Dobson, P.F., **Kneafsey, T.J.**, "Numerical simulation of tuff dissolution and precipitation experiments: Validation of thermal-hydrologic-chemical (THC) coupled-process modeling," 2001 AGU Fall Meeting, San Francisco, CA, December 10-14, 2001, LBNL-48333 Abs.
- Kneafsey, T.J.**, C.M. Oldenburg, and R. Salve, "Clay Swelling and Particle Redistribution in a Saw-Cut Fracture in the Paintbrush Nonwelded Unit of the Topopah Spring Tuff", 2001 AGU Fall Meeting, San Francisco, CA, December 10-14, 2001
- Kneafsey, T.J.**, J.A. Apps, and E.L. Sonnenthal, "Tuff Dissolution and Precipitation in a Boiling, Unsaturated Fracture", 2001 International High-Level Radioactive Waste Management Conference, Las Vegas, Nevada, April 29-May 3, 2001, LBNL 46149
- Dobson, P., J. Hulen, **T.J. Kneafsey**, and A. Simmons, "Permeability at Yellowstone: A Natural Analog for Yucca Mountain Processes", 2001 International High-Level Radioactive Waste Management Conference, Las Vegas, Nevada, April 29-May 3, 2001, LBNL 47051
- Dobson, P., J. Hulen, **T.J. Kneafsey**, and A. Simmons, "The Role of Lithology and Alteration on Permeability and Fluid Flow in the Yellowstone Geothermal System, Wyoming", Proceedings, Twenty-Sixth Workshop on Geothermal Reservoir Engineering, Stanford University, Stanford, California, January 29-31, 2001, SGP-TR-168, LBNL-47129
- Kneafsey, T.J.** E.L. Sonnenthal, and J.A. Apps, "Tuff Dissolution and Precipitation - Fracture Sealing in an Experimental Heat Pipe" Presented at the American Geophysical Union 2000 Fall Meeting, San Francisco, CA, December 15-19, 2000, LBNL 47028-Abs
- Kneafsey, T.J.** M.A. Cushey, and R. Salve, "An Investigation of Intermittent Flow in Unsaturated Fractures" Presented at the American Geophysical Union 1999 Fall Meeting, San Francisco, CA, December 13-17, 1999

- Kneafsey, T.J.** and K. Pruess, "Vaporizing Flow in Hot Fractures: Observations from Laboratory Experiments," Proceedings, Dynamics of Fluids in Fractured Rocks, Concepts and Recent Advances, February 10 - 12, 1999, Lawrence Berkeley National Laboratory, Berkeley, California, LBNL-42292
- Kneafsey, T.J.** and J.J. Roberts, "Fracture-Matrix Interaction Under Boiling Conditions - Behavior of Water and Solutes in a Hot Fracture," 1998 Fall Meeting, American Geophysical Union, December 6 - 10, 1998, San Francisco, California, LBNL-42207 Abs.
- Kneafsey, T.J.** and J.J. Roberts, "Water Flow, Imbibition, and Mineral Precipitation in a Boiling Tuff Fracture - Experimental Results," Field Testing and Associated Modeling of Potential High-Level Nuclear Waste Geologic Disposal Sites, December 11, 1998, Lawrence Berkeley National Laboratory, Berkeley, California
- Kneafsey, T.J.** and K. Pruess, "Thermohydrological Laboratory Tests - Insights into Processes and Behavior," Eighth International Conference on High-Level Radioactive Waste Management, May 11 - 14, 1998, Las Vegas, Nevada

Laboratory Reports

- Seol, Y., **T.J. Kneafsey**, and L. Tomutsa, "Relative Permeability Estimations for Methane Hydrate-Bearing Sand", October, 2005, LBNL-59051
- Freifeld, B, **T. Kneafsey**, J. Pruess, P. Reiter, and L. Tomutsa, "X-ray Scanner for ODP Leg 204: Drilling Gas Hydrates on Hydrate Ridge, Cascadia Continental Margin", LBNL-51327, 2002
- Kneafsey, T.J.**, M.J. O'Sullivan, K. Pruess, and G.S. Bodvarsson, "Experience in Geothermal Reservoir Simulation to Gain Confidence in Thermohydrologic Predictions for nuclear Waste Disposal," LBNL 48124, 2002
- Kneafsey, T.J.**, C.M. Oldenburg, and R. Salve, "The effect of clay swelling on fracture flow in the Paintbrush nonwelded unit of the Topopah Spring Tuff", LBNL-48125, 2001
- Hu, Q., **T. Kneafsey**, and J. Wang, "Summary report on Phase 1 feasibility study of in-drift diffusion", LBNL-49063, 2001
- Wildenschild, D., M.S. Costantino, J.J. Roberts, **T.J. Kneafsey**, and W. Lin, "Fracture/Matrix Flow Experiments Results", Lawrence Livermore National Laboratory, UCRL-ID-131775, September 30, 1998, 38 pages
- Kneafsey, T.J.** and K. Pruess, "Preferential Flow Paths and Heat Pipes: Continued Laboratory Experiments on Heat-Driven Flow in Natural and Artificial Rock Fractures and Scaling Relationships," E.O. Lawrence Berkeley Laboratory Report 42262, August 1998, 70 pages
- Kneafsey, T.** and K. Pruess. "Experimental studies of vaporizing flows in unsaturated fractures", 1997 Fall Meeting of the American Geophysical Union, 1997. LBNL-40731 Abs.
- Kneafsey, T.J.** and K. Pruess, "Preferential Flow Paths and Heat Pipes: Results from Laboratory Experiments on Heat-Driven Flow in Natural and Artificial Rock Fractures," E.O. Lawrence Berkeley Laboratory Report 40467, June 1997, 47 pages

Internet

<http://www-esd.lbl.gov/NW/lab.shtml>
http://www-esd.lbl.gov/ESD_staff/kneafsey/